from milk than the cardiac portion of the stomach. The cardiac portion of the stomach of the hawk was found more powerful than the same part of a common fowl.

The gastric glands were carefully dissected out from behind the membrane that lines the cardiac extremity of the stomach of a turkey; and of these, forty grains, by weight, were taken, and their effect compared with an equal weight of membranous lining of the same cavity, an equal weight of membrane from the fourth cavity of a calf's stomach in a recent state, and forty grains of dry rennet. Since the last must have been prepared from about four times its weight of recent membrane, its effect was produced in much the shortest time. The coagulation effected by the gastric glands took place nearly at the same time as by the recent calf's stomach; while that from the lining of the turkey's stomach was nearly three times as long in producing the corresponding effects.

From these experiments, the author infers that the secretion from the gastric glands possesses the power of coagulating milk, and communicates that property to adjacent parts, by which it is imbibed.

On some Properties of Light. *By* David Brewster, *LL.D. F.R.S. Edin.* *In a Letter to Sir* Humphry Davy, *LL.D. F.R.S.* Read January 28, 1813. [*Phil. Trans.* 1813, *p.* 101.]

The author, having been for some time past engaged in a course of experiments on the refractive and dispersive powers of different substances, the details of which are intended for future publication in a separate work, confines himself, at present, to a relation of such of his results as have most of novelty or importance. After repeating the experiments that have been made by others on the properties that light acquires by transmission through Iceland-spar, and upon the corresponding properties of reflected light originally discovered by Malus, and by him termed polarization, Dr. Brewster observed a singular appearance of colour on each side of a luminous object, viewed through a thin slice of laminated agate. Upon examination of these coloured images through a prism of Iceland-spar, this light was found to be similarly polarized, so as to appear or disappear accordingly as the laminæ of the agate were parallel or transverse to the principal section of the spar. He found also that the colourless light transmitted directly through the agate, and from which the coloured rays had been separated, was polarized as well as the coloured rays, appearing and disappearing alternately with them during the revolution of the spar. And accordingly when light previously polarized by reflection was received upon the agate, its transmission or reflection depended on the relative position of the laminæ of the agate to the plane of reflection; for when these were at right angles to each other, no light whatever was transmitted.

In the same manner light polarized by transmission through the laminated agate, manifested the usual properties of light so affected by other means.

Along with the polarized light, Dr. Brewster also observed a faint nebulous light not polarized, which he also finds in transmission through cornelian and chalcedony, and thinks it important as leading to a satisfactory theory of polarization.

The next observation of the author relates to the high refractive power of chromate of lead, which, he remarks, is greater than that of any other body hitherto recorded; and upon its double refraction, which, he says, is so enormous, that the deviation of the extraordinary ray is more than thrice that produced by Iceland-spar.

The index of refraction assigned by Dr. Brewster to chromate of lead, is 2·926, and along with it he names realgar, of which the index is 2·510, as another substance that refracts more strongly than the diamond. Phosphorus, he adds, stands higher than has been supposed, being 2·224, and then native sulphur next in order 2·115.

The dispersive power of chromate of lead is observed to exceed that of other substances in a still greater proportion than its refractive power, being more than ten times as great as that of the densest flint-glass, and fifteen times as high as that of water.

The concluding section of the author's letter relates to the existence of two dispersive powers in all doubly refracting media. Mr. Cavallo, and others, have already observed, that the dispersions occasioned by the two refractions of Iceland-spar are not equal. Dr. Brewster observes that this is general to all, and he undertakes to assign the proportion of these two powers in different substances.

In chromate of lead the dispersive power manifested in the rays ordinarily refracted, is double that of rays obliquely refracted; and in Iceland-spar the disparity is nearly as great.

The existence of a double dispersive power, it is observed by the author, instead of assisting in the explanation of other properties, only adds one to the numerous difficulties that are to be surmounted in reducing to any general rules those capricious phenomena exhibited by light in its passage through transparent bodies.

An Appendix to Mr. Ware's *Paper on Vision. By Sir* Charles Blagden, *F.R.S.* Read February 4, 1813. [*Phil. Trans.* 1813, *p.* 110.]

The author remarks, that Mr. Ware's observations with regard to short-sightedness, being in general merely the consequence of habit acquired at an early age, is conformable with his own experience in general, and that he himself is a particular instance of natural long-sightedness gradually converted into confirmed short sight. He very well remembers first learning to read, at the common age of four or five years, and that at that time he could see the usual inscriptions across a wide church; but that at the age of nine or ten years he could no longer distinguish the same letters at the same distance, without the assistance of a watch-glass, which has the effect of one slightly concave. In a few years more the same glass was not sufficiently powerful; but yet his degree of short-sightedness was so inconsiderable, that he yielded to the dissuasion of his friends from